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AUTHOR Campillo, Magda; Pool, Suzanne
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ABSTRACT

This paper reports the results of a five-week intervention designed to improve students' writing proficiency through self-efficacy training in a remedial summer course. Twenty pre-freshmen students participated in the program. In addition to whole-class instruction, students met individually with instructional coordinators. During these meetings students graphed their self-efficacy estimates along with their actual writing scores. These graphs helped students become more accurate in monitoring their writing performance and employing useful strategies to improve their learning. Over time, students improved their writing skills and became more accurate in their self-efficacy judgments. Students who participated in the self-efficacy intervention outperformed the students who were involved in the regular remedial summer writing course. Contains 9 references, and 4 tables and 2 figures of data. (Author/RS)

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"Improving writing proficiency through self-efficacy training" *

Magda Campillo, Suzanne Pool
Graduate School and University Center
City University of New York (CUNY)
33 West 42nd street
New York, NY 10036-8099

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Abstract

This paper reports the results of a five-week intervention designed to improve students' writing proficiency through self-efficacy training in a remedial summer course. Twenty pre-freshmen students participated in the program. In addition to whole-class instruction, students met individually with instructional coordinators. During these meetings students graphed their self-efficacy estimates along with their actual writing scores. These graphs helped students become more accurate in monitoring their writing performance and employing useful strategies to improve their learning. Over time, students improved their writing skills and became more accurate in their self-efficacy judgments. Students who participated in the self-efficacy intervention outperformed the students who were involved in the regular remedial summer writing course.

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Introduction

This paper reports the results of a pilot intervention designed to improve students' writing proficiency through *self-efficacy training* in a remedial summer course. The program was planned and conducted based on a social cognitive model of academic self-regulation (Schunk, 1989; Zimmerman, 1995).

In 1977 Bandura proposed a theory of the origins, mediating mechanisms, and diverse effects of personal efficacy beliefs for different domains of human functioning.

Academic self-efficacy refers to personal judgements or beliefs about one's capabilities to perform various types of academic tasks, such as writing (see Bandura, 1977; 1997).

Self-efficacy is distinctive as a construct in that it:

a. Involves self-judgements or beliefs about one's ability to perform a particular activity, rather than beliefs about general personal qualities, such as one's physical characteristics or psychological traits.
b. Is context-dependent because many non-ability influences can enhance or impede execution of skills.
c. Depends on a mastery criterion of success rather than a normative or other criteria.
d. Is assessed before students are asked to perform and thus can play a causal role in academic functioning.

There is extensive evidence of consistent and sizable correlations between students' perceived efficacy and achievement (Multon, Brown, & Lent, 1991; Pajares, 1997; Schunk 1989; Zimmerman, 1995). There is also evidence that self-efficacy judgments of poor achievers are often inaccurately high. Because of their metacognitive limitations, poor achievers often fail to perceive the difficulty of a task or to self-evaluate their progress accurately. As a result, they do not study sufficiently (Ghatala, Levin, Foorman, & Pressley, 1989).

To date, self-efficacy assessment has been used as a psychological measure, but in the present program it will be used as an *intervention procedure* as well. Zimmerman, Bonner, and Kovach (1996) have suggested an intervention procedure in which students' self-efficacy assessment is linked directly to homework assignments or in-class quizzes. The present program is unique because it incorporates this model into a remedial summer writing course. Traditionally, writing remediation programs do not include self-efficacy beliefs as part of the intervention.

Methodology

- **Subjects**

The present study was conducted with pre-freshmen students enrolled at a technical college serving inner city minority students. All were part of a compensatory program aimed at helping educationally and economically disadvantaged students, and had failed a writing proficiency entrance test that precluded their enrollment in most regular college courses. Consequently, they were required to attend a remedial summer writing course and retake the exam.

Twenty students who enrolled in the regular summer course were asked to participate in a variant of the program that emphasized the self-efficacy intervention.

Participating students had a high school average of 74 and an English average of 75. Most students were primarily of Black and Hispanic origin, 8 of them females and 12 males. The average age was 19.

- **Intervention**

Participants attended the program four days per week, over a time period of five weeks. In addition to receiving whole-class writing instruction each morning, students participated in small-group tutoring, practiced their skills individually through a computer-based tutorial program, and met individually with instructional coordinators who provided strategy training.

Homework was assigned daily and practice writing proficiency tests administered weekly. Students were asked to make self-efficacy estimates prior to each homework assignment and practice writing proficiency test. A total of fifteen homework assignments and five practice tests were completed.

During individual meetings with the instructional coordinator, students graphed their self-efficacy estimates along with their obtained scores. This procedure served as a "reality check" that helped students adapt their self-efficacy judgments during subsequent writing assignments. Ultimately, the goal of the intervention was for students to become more accurate in evaluating how well they completed each assignment.

The graphs helped students reconsider their methods and amount of studying time. With the instructional coordinators, students reviewed the graphs and developed personalized plans to improve their effectiveness. These plans involved weekly goals and corresponding strategies designed to ameliorate specific writing deficiencies unique to each student. Goals focused on strategies such as improving time management, thematic organization, grammar, revisions, etc. Instructional coordinators modeled the various strategies and provided students with feedback regarding their implementation of the strategies.

Results

There were two primary sources of data for assessing the self-efficacy intervention:

1. The five practice writing proficiency tests.
2. The fifteen homework assignments.

The writing tests and homework assignments were scored on a ten-point scale (five points were for the general structure and organization of the text and five for grammar performance).

We used the self-efficacy assessment procedure recommended by Zimmerman, Bonner, and Kovach (1996). Self-efficacy scores consisted of a predicted score and confidence estimate. If a student was "confident" in their performance the predicted score remained the same. If a student was "extremely confident", he or she added one point to the predicted score. On the other hand, if the student was "not very confident ", he or she subtracted one point. Students were asked to compute their self-efficacy scores before the essays were graded.

In figure 1, the average self-efficacy scores and actual scores for the practice writing proficiency test are depicted. As predicted, students initially overestimated their self-efficacy beliefs. Interestingly, all students had failed the writing proficiency entrance test (the very cause of having to sacrifice their summer to a remedial writing course!), yet their first practice test prediction greatly overestimated their actual performance. With time and training, however, the students' self-efficacy beliefs became more accurate. Furthermore, writing achievement and self-efficacy scores increased over time.

Tables 1 and 2 show that indeed the actual scores and the self-efficacy scores changed significantly over time. The average performance on the first two tests was 4.95, compared to the average performance on the last two tests, which was 7.27. A t-test analysis allowed us to conclude that the difference is significant. The average self-efficacy score for the first two tests was 6.43, and increased to 7.58 on the last two. Again, this difference is significant.

In addition, an accuracy measure was computed by calculating the difference between the self-efficacy scores and the actual scores. For the first two practice tests, the discrepancy was 1.97 points, whereas for the last two tests it was 1.33 points; a significant difference. This substantial reduction in the discrepancy measure (67%) reflects an increase in the accuracy of the self-efficacy estimate over time.

Figure 2 depicts the average self-efficacy scores and actual scores for the fifteen homework assignments. Results are similar to the practice test results. Students initially misjudged their self-efficacy, but over time they improved the accuracy of the prediction.

Tables 3 and 4 show that once again achievement and self-efficacy scores changed throughout the intervention. For this particular analysis, we compared the first five homework assignments against the last five. As shown, t-tests indicate significant differences on self-efficacy estimates, writing performance, and accuracy over time. These results are extremely interesting because, unlike the practice tests, the homework assignments became more difficult. The first homework assignment consisted of writing an introductory paragraph, whereas eventually students were required to write a five-paragraph essay. Even when the degree of difficulty was being increased, students were able to become more accurate in their predictions. The discrepancy between these predictions and actual scores was reduced by 60%.

Finally, more students involved in the self-efficacy intervention program passed the writing proficiency entrance test at the end of the summer than did students in the regular remedial courses. The overall passing rate of students in the regular summer course was 60%, whereas the passing rate of students in our program was 80%. Although a cause-effect relationship cannot be established due to lack of random assignment and experimental control over other variables that were part of the program (tutors, computers, etc.), the results seem encouraging. In future studies, these confounding variables should be controlled for.

FIGURE 1

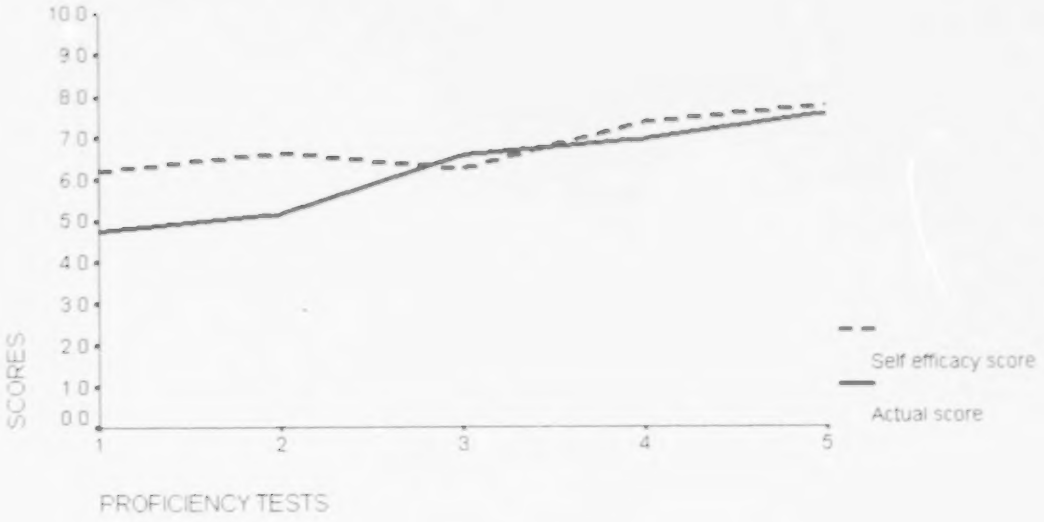

FIGURE 2

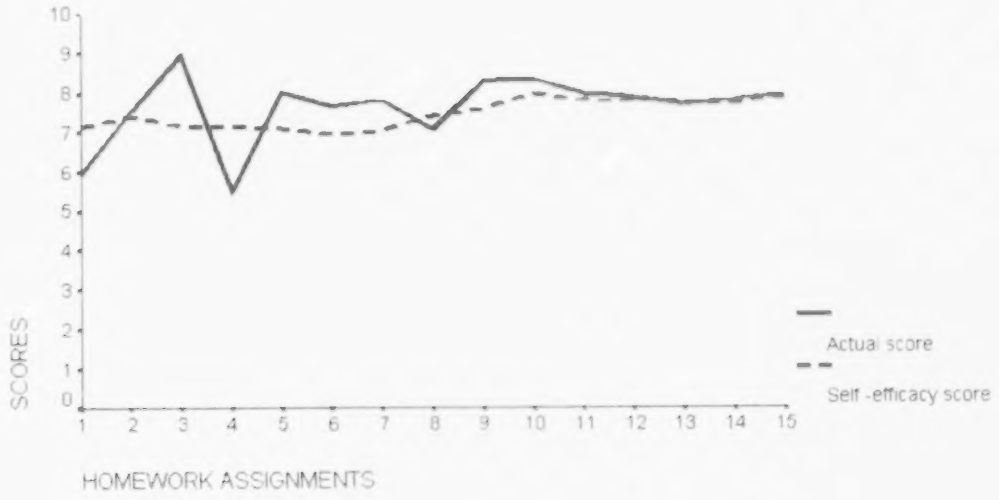

Table 1. Practice Writing Proficiency Tests.
Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Actual scores (1 to 2)	4.9500	20	1.7464	.3905
Actual scores (4 to 5)	7.2750	20	1.6200	.3622
Self-efficacy scores (1 to 2)	6.4250	20	1.4804	.3310
Self-efficacy scores (4 to 5)	7.5750	20	1.1154	.2494
Accuracy (1 to 2)	1.9750	20	1.0696	.2392
Accuracy (4 to 5)	1.3250	20	.9252	.2069

Table 2. Practice Writing Proficiency Tests.
Paired Samples Test

	Paired Differences					t	df	Sig (2-tailed)
				95% Confidence Interval of the difference				
	Mean	Std. deviation	Std. error	Lower	Upper			
Actual scores	-2.3250	2.1338	.4771	-3.3237	-1.3263	-4.873	19	.000
Self-efficacy scores	-1.1500	.7452	.1666	-1.4987	-.8013	-6.902	19	.000
Accuracy	.6500	1.3214	.2955	3.157E-02	1.2684	2.200	19	.040

Discussion and educational and scientific importance

To our knowledge, this is one of the first studies to show that the self-efficacy procedure developed by Zimmerman, Bonner and Kovach (1996) can improve the accuracy of students' self-judgements and can lead to progressive learning of writing strategies.

These students were at high levels of academic risk, with deficiencies in not only writing skills but also in their capability to monitor their own learning. Historically, at-risk students have not benefited from conventional forms of study skill training (Hattie, Biggs, & Purdie, 1996). They tend to mis-estimate their competence and exert little effort to change their patterns of writing.

The results of our program indicate that self-efficacy judgments are informative to researchers and teachers about students' self-awareness and academic motivation, and are also helpful to students in becoming better judges of their own writing proficiency.

The results of this intervention revealed that conventional forms of instruction can be significantly augmented when a self-efficacy training component is included. Declining assessments in self-efficacy may lead to lower motivation and perhaps frustration if students are not sufficiently self-regulated. By combining self-efficacy graphing with strategic modeling and support, emerging self-regulatory competence can be nurtured.

Table 3. Homework assignments
Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Actual scores (1 to 5)	7.2800	20	1.1340	.2536
Actual scores (11 to 15)	7.8975	20	.8414	.1881
Self-efficacy Scores (1 to 5)	7.1900	20	1.2822	.2867
Self-efficacy Scores (11 to 15)	7.8200	20	1.0922	.2442
Accuracy (1 to 5)	1.8900	20	.9279	.2075
Accuracy (11 to 15)	1.1450	20	.5552	.1241

Table 4. Homework assignments
Paired Samples Test

	Paired Differences							
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Actual scores	-.6175	1.0975	.2454	-1.1311	-.1039	-2.516	19	.021
Self-efficacy scores	-.6300	.7601	.1700	-.9857	-.2743	-3.707	19	.001
Accuracy	.7450	.9416	.2106	.3043	1.1857	3.538	19	.002

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